CLAIMS

What is claimed is:

1. A method, comprising:

identifying a set of requests corresponding to packets desired to be sent from a plurality of inputs across a packet switch to a particular output, the set of requests including *j* requests from a particular source with the ability to send *k* packets during a particular packet time and having a saturation level of *s* packets;

slow-start adjusting the value of said *j* to a slow-start value, wherein the slow-start value is less than said *k* when a number of packets corresponding to the particular source is less than said *s*;

maintaining a grant starting position;

determining a grant advancement position;

identifying a first *n* requests in a predetermined sequence starting from the grant starting position, where *n* is less than or equal to the maximum number of packets that can be sent in a single packet time to the particular output; and wherein the first *n* requests include the slow-start value number of requests from the particular source; and

updating the grant starting position in response to the first *n* grants including a particular grant corresponding to the grant advancement position.

2. The method of claim 1, wherein said slow-start adjusting the value of said *j* to the slow-start value includes setting the slow-start value to said *k* when the number of packets corresponding to the particular source is greater than said *s*.

3. The method of claim 1, wherein said slow-start adjusting the value of said *j* to the slow-start value includes a division or shift operation by a predetermined value on said *j* when the number of packets corresponding to the particular source is less than said *s*.

4. The method of claim 1, wherein said slow-start adjusting the value of said *j* to the slow-start value includes identifying the slow-start value in a data structure based on the value of said *j*.

5. An apparatus, comprising:

a plurality of request generators;

a plurality of grant arbiters coupled to the plurality of request generators;

a plurality of acceptance arbiters coupled to the plurality of grant arbiters;

wherein each of the plurality of request generators is configured for generating requests for its associated input of a plurality of inputs of a switch, wherein said requests include *j* requests from a particular source with the ability to send *k* packets during a particular packet time and having a saturation level of *s* packets, and a request generator corresponding to the particular source of the plurality of request generators is configured to slow-start adjust the value of said *j* to a slow-start value, wherein the slow-start value is less than said *k* when a number of packets corresponding to the particular source is less than said *s*;

wherein each of the plurality of grant arbiters is configured for generating grants based on one or more received requests, said grants corresponding to authorization to send to its associated output of a plurality of outputs of the switch, where said generating grants includes maintaining a grant starting position, determining a grant advancement position, identifying a first *n* requests in a predetermined sequence starting from the grant starting position, where *n* is less than or equal to the maximum number of packets that can be sent in a single packet time to said associated output; and updating the grant starting position in response to the first *n* grants including a particular grant corresponding to the grant advancement position; and

wherein each of the plurality of acceptance arbiters is configured for generating acceptances based on one or more received grants, said acceptances corresponding to its associated input of the plurality of inputs.

6. The apparatus of claim 5, wherein the request generator corresponding to the particular source is configured to set the slow-start value to said *k* when the number of packets corresponding to the particular source is greater than said *s*.

7. A computer-readable medium containing computer-executable instructions for performing steps, said steps comprising:

identifying a set of requests corresponding to packets desired to be sent from a plurality of inputs across a packet switch to a particular output, the set of requests including *j* requests from a particular source with the ability to send *k* packets during a particular packet time and having a saturation level of *s* packets;

slow-start adjusting the value of said *j* to a slow-start value, wherein the slow-start value is less than said *k* when a number of packets corresponding to the particular source is less than said *s*;

maintaining a grant starting position;

determining a grant advancement position;

identifying a first *n* requests in a predetermined sequence starting from the grant starting position, where *n* is less than or equal to the maximum number of packets that can be sent in a single packet time to the particular output; and wherein the first *n* requests include the slow-start value number of requests from the particular source; and

updating the grant starting position in response to the first *n* grants including a particular grant corresponding to the grant advancement position.

8. The computer-readable medium of claim 7, wherein said slow-start adjusting the value of said *j* to the slow-start value includes setting the slow-start value to said *k* when the number of packets corresponding to the particular source is greater than said *s*.

9. The computer-readable medium of claim 7, wherein said slow-start adjusting the value of said *j* to the slow-start value includes a division or shift operation by a predetermined value on said *j* when the number of packets corresponding to the particular source is less than said *s*.

10. The computer-readable medium of claim 7, wherein said slow-start adjusting the value of said *j* to the slow-start value includes identifying the slow-start value in a data structure based on the value of said *j*.

11. An apparatus, comprising:

means for identifying a set of requests corresponding to packets desired to be sent from a plurality of inputs across a packet switch to a particular output, the set of requests including *j* requests from a particular source with the ability to send *k* packets during a particular packet time and having a saturation level of *s* packets;

means for slow-start adjusting the value of said *j* to a slow-start value, wherein the slow-start value is less than said *k* when a number of packets corresponding to the particular source is less than said *s*;

means for maintaining a grant starting position;

means for determining a grant advancement position;

means for identifying a first *n* requests in a predetermined sequence starting from the grant starting position, where *n* is less than or equal to the maximum number of packets that can be sent in a single packet time to the particular output; and wherein the first *n* requests include the slow-start value number of requests from the particular source; and

means for updating the grant starting position in response to the first *n* grants including a particular grant corresponding to the grant advancement position.

12. The apparatus of claim 11, wherein said means for slow-start adjusting the value of said *j* to the slow-start value includes means for setting the slow-start value to said *k* when the number of packets corresponding to the particular source is greater than said *s*.

13. The apparatus of claim 11, wherein said means for slow-start adjusting the value of said *j* to the slow-start value includes means for performing a division or shift operation by a predetermined value on said *j* when the number of packets corresponding to the particular source is less than said *s*.

14. The apparatus of claim 11, wherein said means for slow-start adjusting the value of said *j* to the slow-start value includes means for identifying the slow-start value in a data structure based on the value of said *j*.